

Remarks

Claims 1-4 and 6-21 are pending for the Examiner's consideration, including amended claims 1-3, 6, 10-16, and 19, as well as new claim 21. Claim 5 has been canceled. No new matter is believed to have been added.

Applicants appreciate the indication in the Office Action that claims 2-3 and 11-14 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Claims 2-3 and 11-14 have been presented herein in independent form, including amendments for clarification purposes.

In the Office Action, the disclosure was objected to because "the statement on p. 6, lines 21-23 appears to be contradictory to the data of Table 1 on p. 7." (Office Action, p. 2, lines 3-4). In response, the specification has been amended to recite that "[t]he substantial assimilation of the axial speeds is achieved, in this case, by means of a graded increase of the available flow cross sections in the individual stages of the turbine." Support for this amendment includes Table 1 of the present application on page 7 thereof.

Claims 16-20 were rejected in the Office Action under 35 U.S.C. § 112, first paragraph, as failing to comply with the enablement requirement. In response, claim 16 has been amended to recite, *inter alia*, "a multi-stage turbine arranged with individual stages having progressively increasing flow cross-sections." Thus, the rejection respectfully is overcome.

Claims 1-15 were rejected in the Office Action under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. With respect to claim 1, the Office Action stated that "[t]he limitation 'modification' that is unaccompanied by a description of what said modification is, does not set the meets [*sic.*] and bounds of the claims." (Office Action, p. 3, lines 5-7). Claim 1 has been amended to recite, *inter alia*, wherein in at least one of the compressor and the turbine in the circuit, at least one selected from the group consisting of the flow ducts, the moving blades, and the guide blade cascades is adapted to accommodate the expansion behavior of the working medium by modification selected from the group consisting of radial obstacles, annular obstacles, and size adjustment. With respect to claim 6, the Office Action stated that "it is not clear how the adjustable guide vanes are deployed to compensate for the thermodynamic properties." (Office Action, p. 3, lines 9-10). Claim 6 has been amended to recite, *inter alia*, wherein adjustable guide blade cascades are provided in at least one of the compressor and turbine disposed to reduce free flow cross

sections therein in order to compensate for variations in thermodynamic properties of the working medium, said variations being caused by inert gases. With respect to claim 10, the Office Action stated that "[t]he limitation 'adjustment' that is unaccompanied by a description of what said modification is, does not set the meets *[sic.]* and bounds of the claims." (Office Action, p. 3, lines 14-16). Claim 10 has been amended to recite, *inter alia*, the adjustment selected from the group consisting of radial obstacles, annular obstacles, and size modification. Finally, the Office Action stated that in claim 15 "the 'adjustment' is not specified." (Office Action, p. 3, lines 10-11). Claim 15 has been amended to recite, *inter alia*, wherein the guide blade cascades comprise adjustable guide blades disposed to reduce free flow cross sections in at least one of the compressor and turbine. Claim 5 has been canceled. Thus, all rejections in the Office Action under 35 U.S.C. § 112, second paragraph are respectfully overcome.

Claims 1, 5, 6, and 9 were rejected in the Office Action under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent No. 6,622,470 B2 to Viteri *et al.* ("Viteri"). Also, claims 4, 6-8, 10, and 15 were rejected in the Office Action under 35 U.S.C. § 103(a) as being unpatentable over Viteri. The rejections respectfully are overcome.

Independent claim 1, as amended, is directed to a gas turbine plant comprising: a circuit including a compressor, a combustion chamber, a turbine and at least one heat sink, the gas turbine plant being operated with (1) a working medium in the form of a carbon dioxide/water mixture, (2) a hydrocarbon reacting as fuel with oxygen in the combustion chamber, and (3) excess carbon dioxide and water thereby occurring being tapped from the circuit at a suitable point; wherein the compressor and the turbine each have a rotor and a casing between which flow ducts run for the working medium, moving blades arranged on the rotor, and guide blade cascades arranged in the flow ducts; wherein the rotor and casing of at least one of the compressor and the turbine largely correspond to a rotor and a casing respectively of a compressor designed for air as the working medium or respectively of a turbine designed for air as the working medium; and wherein in at least one of the compressor and the turbine in the circuit, at least one selected from the group consisting of the flow ducts, the moving blades, and the guide blade cascades is adapted to accommodate the expansion behavior of the working medium by modification selected from the group consisting of radial obstacles, annular obstacles, and size adjustment.

Independent claim 10, as amended, is directed to a gas turbine plant comprising: a circuit including a compressor, a combustion chamber, a turbine and at least one heat sink, the gas turbine plant being operated with (1) a working medium in the form of

a carbon dioxide/water mixture, (2) a hydrocarbon reacting as fuel with oxygen in the combustion chamber, and (3) excess carbon dioxide and water being discharged from the circuit at a point downstream from the compressor; wherein the compressor and turbine each have a rotor and a casing with flow ducts for the working medium running therebetween, moving blades disposed on the rotor, and guide blade cascades disposed in the flow ducts; wherein the rotor and casing of at least one of the compressor and the turbine are configured and dimensioned for use with an alternate working medium in the form of air; and wherein expansion behavior of the carbon dioxide/water mixture in at least one of the compressor and turbine is accommodated by adjustment of at least one selected from the group consisting of the flow ducts, the moving blades, and the guide blade cascades, the adjustment selected from the group consisting of radial obstacles, annular obstacles, and size modification.

Viteri is directed to semi-closed Brayton cycle gas turbine power systems. The Office Action fails to explain how Viteri relates to the claimed modification selected from the group consisting of radial obstacles, annular obstacles, and size adjustment as recited in independent claim 1. Nor does the Office Action explain how Viteri relates to the claimed adjustment selected from the group consisting of radial obstacles, annular obstacles, and size modification, as recited in independent claim 10.


With respect to dependent claims 4 and 6-9 which depend from claim 1, and dependent claim 15 which depends from claim 10, it is submitted that these claims at least are patentable not only because of the patentability of the independent claim from which they depend, but also for the totality of features recited respectively therein.

In view of the foregoing, it is believed that all the pending claims are in condition for allowance, which is respectfully requested. If the Examiner does not agree, then a personal or telephonic interview is respectfully requested to discuss any remaining issues so as to expedite the eventual allowance of the claims.

A fee for the presentation of new claims is believed to be due and a Fee Transmittal Sheet is submitted concurrently herewith. A Petition for Extension of Time also is submitted concurrently herewith. A Change of Correspondence Address for Application was previously submitted. Should any additional fees be required, please charge such fees to Steptoe & Johnson LLP Deposit Account No. 19-4293.

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Respectfully Submitted,



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Enclosures